

## Amendments to the Claims:

1. (Previously Presented) A cooling system for a vehicle powertrain having a motor and a transmission comprising:

said motor having a stator housing;

a cooling loop in heat conductive contact with said motor stator housing and with said transmission;

said cooling loop comprising a heat exchanger and conduits providing a fluid flow connection between said motor stator housing, said transmission, and said heat exchanger;

said cooling loop further comprising a mechanical transmission pump and an auxiliary pump; and

said cooling system further comprising a controller for receiving and processing input from at least one vehicle sensor, and for commanding said auxiliary pump to operate when the processed input of at least one vehicle sensor exceeds a pre-selected threshold.

2. (Cancelled)

3. (Previously Presented) The cooling system of claim 1, wherein the controller is a vehicle system controller.

4. (Previously Presented) The cooling system of claim 1, wherein:

said cooling loop further comprises bypass conduits and bypass valves having actuators independently controllable by the controller to operate when the processed input from at least one vehicle sensor exceeds a pre-selected threshold; and

said auxiliary pump is reversible.

5. (Original) The cooling system of claim 1, wherein the motor is an integrated-starter-generator.

6. (Original) The cooling system of claim 1, wherein the powertrain is arranged in a series configuration.

7. (Original) The cooling system of claim 1 wherein the auxiliary pump is internal to the transmission.

8. (Original) The cooling system of claim 1 wherein the auxiliary pump is external to the transmission.

9. (Currently Amended) The cooling system of claim 1, wherein the cooling loop is configured to maintain a transmission temperature at no greater than 250 degrees Fahrenheit and a temperature for said motor at no greater than ~~630 degree~~ 350 degrees Fahrenheit.

10. (Original) The cooling system of claim 1, wherein the stator housing is overlapped by a transmission housing.

11. (Original) The cooling system of claim 1, wherein the stator housing is adjacent to a transmission housing.

12-16. (Cancelled)